



Responding to Climate Change in the Pacific

MOVING FROM STRATEGY TO ACTION

Asian Development Bank



Pacific Studies Series

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Abbreviations

ADB	–	Asian Development Bank
AusAID	–	Australian Agency for International Development
CCIP	–	Climate Change Implementation Plan
DMC	–	developing member country
GEF	–	Global Environment Facility
GHG	–	greenhouse gas
PARD	–	Pacific Department
PCCP	–	Pacific Climate Change Program
REDD	–	Reduced Emissions from Deforestation and Forest Degradation

Foreword

Climate change will have severe and unique impacts on the Pacific island countries—severe because many are low islands in which there are few refuges from worsening storms and rising sea levels, and unique because their isolation and small size severely restrict their capacity to adapt to the impacts of climate change. Pacific country leaders have long called for coordinated and concerted support by development partners. However, to date, the response has been limited and fragmented.

The Asian Development Bank, in consultation with its Pacific developing member countries (DMCs), has developed the Pacific Climate Change Implementation Plan and a supporting action program, the Pacific Climate Change Program (PCCP). A fundamental aspect of these programs is improving development partner response and making funding readily accessible for the Pacific DMCs through a programmatic approach to financing measures for climate change.

We hope that other development partners will endorse the strategic approach of the PCCP to support the Pacific DMCs in responding to climate change, and participate in its financing. The PCCP is intended to respond to the call from the Pacific countries for accelerated technical and financial support for climate change adaptation and mitigation.

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Robert Wihtol
Director General
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Climate Change and the Pacific Islands

ADB's 14 Pacific developing member countries (DMCs) exhibit wide diversity in physical and socioeconomic features, but also share many things in common. They have small, scattered populations, are geographically dispersed and remote, have fragile environments, and face similar challenges. They need to generate high, sustained rates of broad-based economic growth from small, narrowly focused economies that are vulnerable to external shocks, both natural and artificial. With limited financial and human resources, they must deliver essential public goods and services. They must promote the national interest through merit-based approaches and good governance in small societies that have strong family and clan obligations.

Their marine and coastal ecosystems, which their communities depend on for livelihood and sustenance, are threatened by overharvesting of resources and pollution from land-based sources. In addition, they are confronted by extraordinary challenges with respect to climate change. They face dire and immediate consequences—from sea level rise and more frequent and stronger storms to the changing distribution of disease vectors—that are markedly disproportionate to their contributions to global greenhouse gas (GHG) emissions.¹

Threats to Peace, Prosperity, and Security

Climate change can prevent Pacific countries from attaining their Millennium Development Goals and poses threats to peace, prosperity, and security. The impacts on food production and land and marine resource use, as well as damage to infrastructure, water resources, and human health, will result in economic losses² and might cause large-scale migration, both internally and externally. Women are at greatest risk from these impacts.

In May 2009, governors of ADB's Pacific DMCs asked ADB to establish a regional climate change fund to support programs and projects aimed at strengthening adaptation measures prioritized by the countries. In August 2009, the Pacific Forum Leaders issued a Call to Action on Climate Change, reiterating to other world leaders the need for a collective effort to implement the Niue Declaration by committing to a Pacific-tailored response to address climate change risks.

Many Pacific countries are already experiencing disruptive changes consistent with the anticipated consequences of global climate change, including increased frequency and severity of coastal erosion, floods, drought, storm surges, groundwater degradation, saline intrusion, coral bleaching, more widespread and frequent occurrences of vector-borne diseases, and periods of exceptionally high sea levels.

As these climate change impacts will continue and increase over the short to medium term—threatening increasing numbers of people, infrastructure, and ecosystems—it is imperative that national and local leaders engage stakeholders in developing and implementing adaptation and mitigation strategies that are technically, financially, and politically achievable.

¹ The Pacific region accounts for less than 0.1% of global GHG emissions, due primarily to its relatively small population, limited industrial activity, and underdeveloped energy services.

² In the 1990s alone, reported natural disasters cost the region \$2.8 billion.

Climate change can prevent Pacific countries from attaining their Millennium Development Goals and poses threats to peace, prosperity, and security

Coping with Climate Change

Adaptation and mitigation are the two principal ways of coping with climate change and its impacts. Adaptation aims to reduce the consequences of climate change, while mitigation aims to reduce the rate at which climate change occurs. Adaptation to climate change can be incorporated into all development activities, while mitigation opportunities exist primarily in renewable energy; energy efficiency; and reduction of emissions from forest degradation, deforestation, and land use.

Adaptation is the adjustment in natural or human systems in response to actual or expected climatic changes or their impacts so as to reduce harm or exploit beneficial opportunities. It is, in large part, an ongoing and flexible process designed to reduce the exposure of society to risks arising from climate variability, including extreme climatic events. It reduces vulnerability and increases resilience. Adaptation is multidimensional and iterative and includes policies and actions designed and implemented to reduce the negative impacts of climate change. It involves

- an assessment of the climate change risks to, or the vulnerability of, human and natural systems;
- a quantification of the consequences of the social, environmental, and economic risks;
- an explicit assessment of the adaptation options in terms of their costs and benefits in reducing unacceptable risks;
- an identification of the most effective adaptation option(s);
- the development of policies and action plans to reduce risks to acceptable levels; and
- the identification of the most effective mechanisms and modalities to mainstream adaptation programs into development decision making and economic planning.

Adaptation options can be divided into measures to reduce exposure (such as climate proofing of infrastructure, land use zoning, sector-level best practices such as selection of climate-resilient crops) and measures to increase adaptive capacity (e.g., strengthening of disaster risk management capabilities, implementation of early warning systems, and maintaining healthy ecosystems).

Increasing adaptive capacity through climate proofing means increasing resilience to, and reducing risks posed by, climate change—for example, through improving the ability of coastal infrastructure to withstand floods and cyclones or relocating physical facilities to higher elevations. To climate proof a development project means to (i) identify risks to the project, or any other specified natural or human asset, as a consequence of both climate variability and extremes; and (ii) ensure that those risks are reduced to acceptable levels through long-lasting,

The Voice of Pacific Leaders

Pacific Forum Leaders have recognized since the early 1990s that climate change is a priority development issue and that a joint effort will have to be taken to adapt to, or mitigate, climate change impact. In October 2000, this view was articulated in the Pacific Islands Framework for Action on Climate Change, Climate Variability, and Sea Level Rise, 2000–2004, updated in June 2005 in the Pacific Islands Framework for Action on Climate Change, 2006–2015.

In 2008, the Pacific Forum Leaders issued the Niue Declaration on Climate Change, which voiced their deep concern about climate change threats to the economic, social, cultural, and environmental well-being of Pacific island countries and called on their development partners to scale up help to reduce the islands' vulnerability to climate change.

environmentally sound, economically viable, and socially acceptable changes implemented at one or more stages of the project.³

The *first step* in climate proofing a development project is to conduct a situation analysis to define the climate context (key climate hazards) and describe the current climate variability and the main climate drivers causing physical changes in the project or study area (benchmarking). The *second step* involves identifying how the climate change projections may impact each of the project objectives. This is done by (i) listing each project objective; (ii) identifying the key outputs from each objective; (iii) listing the climate changes that may impact the key output(s); and (iv) determining the potential impact of the projected climate changes on the key outputs based on available data and literature, the history of previous occurrences, and expert judgment. The *third step* involves identifying adaptation options for managing recognized risks by distinguishing the climate change considerations for each expected project output and defining the response(s) to manage the potential climate change impacts on the project output. The *final step* involves determining the resources required to implement the identified adaptation responses.

Climate proofing projects at the design stage could increase their costs by about 10%–20%.⁴ However, the additional cost will normally be much less than would be incurred by infrastructure or other assets over their lifetimes if they were not climate proofed. It is therefore good practice to ensure that climate-related risks, including disaster risks, are considered at the design stage of all future projects.⁵ Climate-resilient engineering design and development protocols have to be incorporated in project planning, including the provision of stringent climate-adaptive development guidelines (such as coastal setback guidelines), to reduce possible risks from climate change impacts, including extreme weather events.

Mitigation measures are needed to prevent GHG concentrations in the atmosphere from reaching a dangerous level in the small island states of the Pacific, which are especially vulnerable to climate change. Mitigation is a human intervention to actively reduce the production of GHG emissions (e.g., reduction in the use of carbon-based energy sources and reduced energy consumption in transport, in construction, at home, and at work) or to remove the GHGs from the atmosphere. Three types of mitigation activities and investments could be targeted for Pacific DMCs: (i) mitigation activities that have strong synergy with adaptation, or in which both adaptation and mitigation objectives are simultaneously advanced; (ii) those that contribute to the sustainable development of the country (particularly in energy and transport development) and mitigate GHG emissions, but which would not be financially viable unless proactively supported (for example, through facilitating access to carbon financing); and (iii) those that are capable of producing significant net benefits on their own, over and above any potential benefits to the climate, and thus are considered “no-regrets” investments, even if they would not normally qualify for additional incentives under the Clean Development Mechanism.⁶

3 ADB. 2005. *Climate Proofing: A Risk-based Approach to Adaptation*. Pacific Studies Series. Manila.

4 World Bank. 2009a. *The Costs to Developing Countries of Adapting to Climate Change, New Methods and Estimates: The Global Report on the Economics of Adaptation to Climate Change Study*. Consultation Draft. 102 pages.

5 ADB. 2009. *Mainstreaming Climate Change in ADB Operations: Climate Change Implementation Plan for the Pacific (2009–2015)*. Pacific Studies Series. Manila.

6 The Clean Development Mechanism, one of the “flexibility” mechanisms defined in the Kyoto Protocol (IPCC 2007), is intended to (i) assist developing countries in achieving sustainable development and contribute to preventing climate change, and (ii) assist developed industrialized countries in complying with their GHG emission limitations and reduction commitments.



What Is Being Done about Climate Change in the Pacific?

In 2007, the Pacific island governments adopted an action plan to carry out the Pacific Islands Framework for Action on Climate Change, in which national activities are complemented by regional programming.

Development partners have been providing advice and support for adaptation and mitigation efforts for some years. For example, ADB has carried out vulnerability assessments in some Pacific countries, leading to such adaptation measures as climate proofing vital coastal areas and infrastructure and disaster risk management. Other adaptation projects include investigating improved agricultural methods, crops, fisheries and forest management.

Mitigation efforts are being directed at reducing fossil fuel use, improving energy efficiency, developing renewable energy (such as wind and solar power), and reducing GHG emissions from forest degradation and deforestation.

Being mostly small, the Pacific island countries generally lack the qualified staff and institutions needed for climate change–related research and for program development and implementation. Recognizing this, most development partners are carrying out capacity building of personnel and institutions.

It is also essential that climate change measures are integrated into national development plans and programs. ADB, for example, is encouraging this by integrating such measures into its partnership strategies with the Pacific countries and in individual projects in the Pacific.

Many development partners—countries and organizations—are helping or planning to help the Pacific island countries address the challenges of climate change. The main countries offering (bilateral) assistance are Australia, Japan, and New Zealand.

Among the multilateral organizations, support is being provided by ADB, the European Union, and the World Bank. The Global Environment Facility (GEF) is making additional funds available to United Nations (UN) agencies such as the United Nations Development Programme and the United Nations Environment Programme, and to multilaterals, including ADB. However, so far, the weak capacity and engagement of various national institutions, the limited involvement of private industry, the large financing needs for relevant technology, and the general inability of Pacific countries to gain access to the necessary funds have all contributed to a disconnect between country aspirations and the delivery of climate-related programs on the ground.

Development partner coordination and harmonization are seen as essential steps for providing a more effective, easily accessible mechanism to overcome these barriers to climate change adaptation in the Pacific. ADB is committed to coordinating with other development partners, particularly the Australian Agency for International Development (AusAID), GEF, Japan International Cooperation Agency, the UN agencies, and the World Bank to maximize investment effectiveness in its climate change response.

Many development partners are encouraging Pacific island countries to integrate climate change measures into their national development plans and programs

The Asian Development Bank and Climate Change in the Pacific

ADB assists the DMCs in increasing the climate resilience of vulnerable sectors, such as natural resources management and water supply and sanitation, and in addressing the social dimensions of climate change

ADB's long-term strategic framework, Strategy 2020, recognizes the urgent need to promote economic growth that is both locally and globally environmentally sustainable, positioning the economies of the region to be productive and competitive while continuing the pace of poverty reduction. Toward that end, ADB is promoting and investing in sound environmental and natural resources management, moving the economies on to low-carbon growth paths, reducing the carbon footprint of cities, and adapting to the unavoidable impacts of climate change. ADB is helping its DMCs (i) improve energy efficiency; (ii) expand the use of clean energy sources; (iii) promote improved urban sanitation and the reduction of fugitive methane emissions; (iv) enable sustainable transport policies and efficient systems; and (v) promote sustainable land use and management of forests and other natural resources for provision of clean water supplies, protection of biodiversity, and sequestration of carbon from the atmosphere to offset GHG emissions. It is also helping DMCs address their vulnerability risks by climate proofing their national development strategies, actions, and projects. In addition, ADB assists the DMCs in increasing the climate resilience of their vulnerable sectors, such as natural resources management and water supply and sanitation, and in addressing the social dimensions of climate change.

Based on Strategy 2020, ADB's Pacific Approach 2010–2014 brings together the lessons from these experiences and views natural hazards, climate change, and deterioration of the environment as key development challenges for Pacific countries. It lists inclusive and environmentally sustainable growth as one of three pillars of its development agenda, and climate change adaptation and mitigation among the drivers of change.

Since the first regional adaptation project⁷ was carried out in the Cook Islands and the Federated States of Micronesia in 2003–2005, ADB has continued supporting Pacific DMCs through a number of climate change initiatives, such as the preparation of guidelines for climate proofing of infrastructure projects and assessing the feasibility of catastrophe risk financing (jointly with the World Bank).

In 2009, ADB approved the Pacific Climate Change Implementation Plan (CCIP), which proposed a dramatic scaling up of climate change investment along with capacity development to help Pacific DMCs plan and implement adaptation and mitigation measures in the face of climate change. Climate risk profiles have also been prepared for 10 Pacific DMCs that will support climate change adaptation and mitigation. ADB is likewise working with regional agencies and selected Pacific DMC governments on the economics of climate change to provide a comprehensive analysis of climate change impacts and the economic costs and benefits of climate change adaptation and mitigation initiatives.

⁷ ADB. 2002. *Technical Assistance for the Climate Change Adaptation Program for the Pacific*. Manila.

The Pacific Climate Change Program

The Pacific Climate Change Program (PCCP) was developed under ADB's *Regional Capacity Development Technical Assistance (R-CDTA) 7394: Strengthening the Capacity of Pacific Developing Member Countries to Respond to Climate Change*. The main objective of PCCP is to ensure the continued economic growth of Pacific DMCs in the face of global climate change, by reducing their vulnerability to its risks and impacts. The program is intended as a “one-stop climate change service” to answer the Pacific DMCs’ present and future climate change–related needs, building on and enhancing efforts from various development partners.

During 2008–2009, ADB developed the CCIP for the Pacific in close consultation with Pacific island country leaders to address their identified adaptation and mitigation needs. The key recommendation of the CCIP is to mainstream climate change issues into ADB operations in the Pacific region, as well as in the individual Pacific DMCs, by ensuring that (i) climate-related risks and vulnerabilities are adequately reflected in the country partnership strategies of Pacific DMCs, (ii) all projects in the ADB pipeline are screened in relation to climate-related risks, and (iii) all infrastructure and other relevant projects are climate proofed. The PCCP will serve as the main vehicle to implement the CCIP in the Pacific.

What Is the Program Strategy?

The PCCP will adopt the following three-pronged strategy to respond to Pacific DMCs’ climate change–related needs:

- Give immediate attention to fast tracking and scaling up climate change adaptation and mitigation investment involving
 - climate proofing ongoing and planned infrastructure projects of ADB and contributing development partners;
 - promoting renewable energy through new technology and research and development; and
 - working with partners to manage land, water, forests, and coastal and marine resources, through programs such as the REDD-plus (Reduced Emissions from Deforestation and Forest Degradation).
- Build capacity to strengthen the knowledge, skills, and practices of sector agencies and communities in various climate change–related fields to enable integration of climate change into the development plans and programs of Pacific DMCs.
- Promote more effective development partner responses by coordinating and harmonizing their responses, sharing best practices, and helping Pacific DMCs access funding from other global financing facilities.

What Are Its Priority Areas?

In view of the diverse climate change–related adaptation needs of Pacific countries, ADB will adopt an integrated approach, addressing climate change mitigation and adaptation, facilitated

The main objective of PCCP is to ensure the continued economic growth of Pacific DMCs in the face of global climate change, by reducing their vulnerability to its risks and impacts

by financing, knowledge generation, and partnerships. Along this line, the PCCP will focus on the following priority sectors:

- **Natural resource management, including agriculture and rural development**, with emphasis on (i) coastal and marine resources protection and management; (ii) integrated watershed management including sustainable forestry management and wildlife management; (iii) building synergy between adaptation and mitigation; and (iv) pursuing proactive measures in anticipation of climate change (e.g., improved soil and water management, diversification and intensification of food and plantation crop production, developing approaches to intensive commercial agriculture, and strengthening land use planning for production of key commercial and subsistence crops).
- **Water**, focusing on (i) flood control; (ii) drainage and sanitation; (iii) rural and urban water supply; and (iv) integrated water management, including improved catchment management (reforestation, soil conservation, wetland protection and management, and land use management) and reducing disaster risks from flooding by regulating development on floodplains and promoting flood-proof building design.
- **Energy**, mainly by investing in emissions reduction solutions that can include (i) energy conservation and efficiency; (ii) renewable energy deployment; and (iii) reduction of GHG emissions from transport, solid waste and wastewater systems, and land use.
- **Transport**, consisting primarily of (i) climate proofing of roads, ports, and airports; (ii) reduction of GHG emissions from transport through the use of clean energy in vehicles; and (iii) limited investments in alternative and cleaner fuels (for example, biofuels development).

How Does the Program Work?

The program will be implemented in two phases during 2010–2015. The first phase (2010–2011) is mainly devoted to

- situation analysis, including benchmarking and vulnerability assessment;
- identification and feasibility analysis of prototype climate adaptation and mitigation projects; and
- implementation of pilot adaptation and mitigation projects.

In the second phase, the pilot projects will be scaled up and/or replicated in other areas in the same country or in other countries.

The program will focus on “no-regrets” activities for adaptation—activities that make sound environmental management sense and foster wise resource use, thus reducing the risk of natural disasters. They will benefit the countries in a cost-effective way even without climate change.

PCCP activities will be a blend of projects and supporting actions. The program’s design and monitoring framework is shown in the appendix, along with the expected impact and outputs, manner of measuring progress, and the risks and assumptions involved. Supporting activities will be of a more general nature and include

- policy and legal reforms so that climate adaptation is carried out effectively;
- building capacity of concerned institutions, including the private sector and civil society, to improve their knowledge and skills in climate-related matters;
- information, education, and communication campaigns directed at policy and decision makers, as well as the general public, to ensure their involvement and to maximize the benefits of climate change–related activities; and
- publishing and disseminating knowledge products, such as tools and methods for climate risk assessment.

The PCCP provides the platform for a multidonor technical and financial assistance facility to support Pacific DMCs in project development and implementation, and to extend start-up and catalytic financing (such as by deploying staff and engaging long-term consultants).

The PCCP will initially support projects already identified and prioritized in the national development plans of Pacific DMCs, which are in the current portfolios of ADB and contributing development partners.

As climate change adaptation and mitigation measures become integrated into the Pacific DMCs' national development plans, the countries' financing needs for these initiatives will greatly increase, and ADB and other development partners can respond by increasing contributions to the PCCP with corresponding Pacific DMC ownership and engagement.

The PCCP is seeking partnerships with existing climate change financing facilities and related funds and with other development partners. Already, GEF has committed funds for the Coral Triangle Initiative to support sustainable adaptation measures for coastal and marine resources in the Fiji Islands, Papua New Guinea (PNG), Solomon Islands, Timor-Leste, and Vanuatu. Also, the Climate Investment Funds' Pilot Program for Climate Resilience is providing substantive partial financing for climate change adaptation measures in development projects (for which development partners provide up to 50% counterpart funding), while the Clean Energy Financing Partnership Facility is supporting clean energy development.

The progress and outputs of the PCCP will be shared with Pacific DMCs and various regional development partners and discussed during key regional meetings, such as the annual Pacific Forum Leaders meetings and Pacific Regional Roundtable meetings.

How Much Will the Program Cost?

PCCP's initial financing requirement for 2010–2012 is estimated at \$250 million, as shown in the next table. It comprises two windows:

- technical assistance for policy development, planning and capacity building, and investment design (\$42 million); and
- project grants and concessional lending for climate proofing and other adaptation measures in priority sectors and projects, including climate change mainstreaming and support for clean energy technology and improving energy efficiency (\$208 million).

The funding requirements of PCCP will be met from ADB's internal funds and from contributions from development partners. An engagement strategy with the development partners and innovative funding schemes will be developed as part of the "one-stop climate change service."

PCCP provides the platform for a multidonor technical and financial assistance facility to support Pacific DMCs in project development and implementation

Indicative Cost and Financing Plan for the Pacific Climate Change Response (2010–2012)
 (\$ million)

	TOTAL	ADB	GEF	PPCR	CEFPF	Others ^a
Window 1 (Technical Assistance)						
Climate-resilient development	12.2	5.8	–	1.5	–	4.9
Coral Triangle Initiative	15.6	1.6	14.0	–	–	–
Clean energy	14.2	1.7	6.0	–	1.5	5.0
Subtotal	42.0	9.1	20.0	1.5	1.5	9.9
Window 2 (Project Grants and Concessional Lending)						
Adaptation						
Climate proofing of 28 projects	130.0	15.0	–	10.0	–	105.0
Strengthening climate-resilient development of Pacific DMCs	36.0	–	–	36.0	–	–
Mitigation (e.g., promotion of renewable/clean energy, improving energy efficiency)	42.0	42.0	–	–	–	–
Subtotal	208.0	57.0	–	46.0	–	105.0
TOTAL	250.0	66.1	20.0	47.5	1.5	114.9

Sources: Pacific Department Database, ADB estimates.

– = 0, ADB = Asian Development Bank, CEFPF = Clean Energy Financing Partnership Facility, DMC = developing member country, GEF = Global Environment Facility, PPCR = Pilot Program for Climate Resilience.

a Includes \$0.325 million from the Canadian Cooperation Fund on Climate Change.

Operational Highlights of the Program

The PCCP includes several courses of action to support the climate change response of its Pacific DMCs, such as the following:

- conducting climate risk studies in, and preparing climate risk profiles for, 10 Pacific DMCs (the Cook Islands, the Fiji Islands, the Federated States of Micronesia, Kiribati, Republic of the Marshall Islands, Palau, Samoa, Tonga, Tuvalu, and Vanuatu) to serve as bases for climate change adaptation initiatives for various development sectors;
- mainstreaming climate change adaptation and mitigation in the country partnership strategies of Pacific DMCs to ensure that climate change implications are incorporated in the economic development policies and planning processes;
- incorporating climate change adaptation in infrastructure projects, such as the Avatiu Harbor Development Project in the Cook Islands, the Highland Region Road Improvement Program in PNG, the Second Road Improvement Project in Solomon Islands, and the Road Network Project in Timor-Leste; and
- preparing climate change adaptation briefs for planned projects.

For 2010–2012, the ADB Pacific Department (PARD) Work Program includes 28 proposed investment projects that either focus directly on adaptation or have climate adaptation features incorporated in their design, as well as technical assistance projects aimed at either helping the Pacific DMCs develop their capacity for adaptation or ensuring that climate adaptation is incorporated in the design of proposed investment projects. In line with the CCIP recommendation to mainstream climate change issues into ADB operations in the Pacific and in the individual Pacific DMCs, all PARD projects are being climate proofed to enhance their resilience to, and reduce the risks posed by, climate change. Two good examples of recently prepared climate proofed road development projects in the Pacific are the Solomon Islands

Second Road Improvement (Sector) Project⁸ (Box 1) and the Timor-Leste Road Network Development Sector Project⁹ (Box 2).

Strengthening Climate-Resilient Development of Pacific DMCs. Through the Pilot Program for Climate Resilience financed by the Climate Investment Funds (Box 3), three country pilot projects (PNG, Samoa, and Tonga) and one regional pilot project will support mainstreaming of climate change adaptation in national development plans.¹⁰ Of the three country pilot projects, ADB will support the design and implementation of those in PNG and Tonga during 2010–2014. Approximately \$47.5 million in technical assistance and investment projects have been allocated for this initiative.¹¹

**Box 1: Solomon Islands Second Road Improvement
(Sector) Project: Climate Adaptation Features**

- Watercourse crossings designed to accept higher floods and river debris loads
- Bridge abutments anchored to piled foundations to minimize the collapse of abutments and approach roads
- River training works designed to minimize the deviation of watercourses from their original paths
- Strengthened protection of approach roads with additional protection and river training works
- Where a raised water table makes the road more flood-prone, side slopes designed to prevent erosion through gradient and protection and a raised road surface
- Rerouting of coastal sections of road exposed to wave action and king-tide inundation away from the immediate foreshore

Source: ADB. 2009. *Report and Recommendation of the President to the Board of Directors on a Proposed ADF Grant and Administration of Grants for Solomon Islands: Second Road Improvement (Sector) Project*. Manila.

**Box 2: Timor-Leste Road Network Development Sector Project:
Climate Adaptation Features**

- Conducting an integrated impact and vulnerability assessment to inform the identification of adaptation options, including both engineering and land management options
- Incorporating adaptation measures for future climate change into subproject planning and engineering designs
- Including adaptation measures as part of the environmental management plan
- Developing models and replicating them in other infrastructure projects under the government's medium-term strategic plan

Source: ADB. 2009. *Report and Recommendation of the President to the Board of Directors on a Proposed ADF Grant for the Democratic Republic of Timor-Leste: Road Network Development Sector Project*. Manila.

8 ADB. 2009. *Report and Recommendation of the President to the Board of Directors on a Proposed ADF Grant and Administration of Grants for Solomon Islands: Second Road Improvement (Sector) Project*. Manila.

9 ADB. 2009. *Report and Recommendation of the President to the Board of Directors on a Proposed ADF Grant for the Democratic Republic of Timor-Leste: Road Network Development Sector Project*. Manila.

10 Implemented jointly by ADB and the World Bank.

11 The World Bank will administer the Pilot Program for Climate Resilience activity in Samoa.

Box 3: Pilot Program for Climate Resilience—A Targeted Program of the Strategic Climate Fund

- Designed to demonstrate ways and strengthen capacities to integrate climate risk and resilience into developing countries' core development policies and planning
- Provides incentives for scaled-up action and transformational change, and offers additional financial resources to help fund public and private sector investment for climate-resilient development plans
- Promotes a participatory approach to developing a broad-based strategy to achieving climate resilience at the national level in the medium and long term
- Enables learning-by-doing and sharing of lessons at the country, regional, and global levels

Source: www.climateinvestmentfunds.org

The Pilot Program for Climate Resilience financed by the Climate Investment Funds aims to strengthen climate resilient development of Pacific DMCs

Coral Triangle Initiative. ADB will support five Pacific DMCs (the Fiji Islands, PNG, Solomon Islands, Timor-Leste, and Vanuatu) in strengthening their marine and coastal resources management activities, with one component emphasizing adaptation to climate change. The design phase is nearing completion, and a phase II project worth \$16 million is scheduled for implementation during 2010–2013 with cofinancing from AusAID, GEF, and other development partners.

Pacific Islands Disaster Risk Reduction and Disaster Management Framework for Action (2005–2015). ADB is working with the World Bank to assess the feasibility of establishing a Pacific Catastrophe Risk Insurance Facility. ADB is mainly responsible for setting up a database on the countries' exposure to natural hazards, which will feed the modeling work on catastrophe risk insurance prepared by the World Bank. Results from the modeling activities will determine the insurance payout, and can also be used for government planning purposes. ADB's participation in this project is through *RETA 6496: Regional Partnerships for Climate Change Adaptation and Disaster Preparedness*. This technical assistance for \$1 million covers eight countries (the Cook Islands, the Fiji Islands, PNG, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu).

Promotion of Clean Energy. Significant clean energy initiatives are also programmed for Pacific DMCs in the next 3 years. A \$40 million loan to PNG to develop the hydropower resource of six provincial towns is scheduled for approval in 2010, and a regional project to support the blending of indigenous biofuels with diesel fuel is planned for the Marshall Islands, PNG, and Solomon Islands. In addition, ADB will implement a \$10–\$12 million project cofinanced by GEF to upscale demand-side energy efficiency initiatives in the Cook Islands, Samoa, Tonga, and Vanuatu. ADB will likewise support the upscaling of renewable energy technology by providing project preparatory assistance for a range of clean energy projects, and improving access to carbon finance through capacity building for the Clean Development Mechanism under *RETA 7394: Regional Technical Assistance for Strengthening the Capacity of Pacific Developing Member Countries to Respond to Climate Change*.

The Way Forward

ADB's Pacific Department will continue to work within the overall framework of Strategy 2020 and the Pacific Approach 2010–2014, under which new activities including adaptation will be formulated, taking into account the envelope of internal resources, availability of cofinancing, and the absorptive capacity of Pacific DMCs.

To support its commitment to climate change adaptation and mitigation in its Pacific DMCs, ADB has set a target of directing 40% of investment resources toward environment and climate change by 2020. Financing for this climate change response is available through various funding sources, including the Asia–Pacific Carbon Fund, Clean Development Mechanism, Climate Change Fund, Climate Investment Funds, Energy Efficiency Initiative, GEF, and private sector funds for the Clean Energy Project. ADB will also use its technical and financial resources to help its DMCs make the transition to low-carbon growth paths, using cleaner sources of energy, using energy more efficiently, and building resilience to the expected impacts of climate change. Also, to maximize investment effectiveness in the climate change response, ADB will continue to pursue and strengthen partnerships with key development partners operating in the Pacific region.

ADB acknowledges that continued poverty reduction will not be possible without proactive efforts to address environmental sustainability, including mitigating the causes of global warming and helping the most vulnerable citizens adapt to the already unavoidable impacts of climate change. In the new millennium, the climate change agenda has become one of the defining challenges that ADB—and the entire development community—must face in achieving further progress in poverty reduction.¹²

ADB's Comparative Advantage

ADB is one of a few donors in the region providing technical assistance, grants, and loans, and is the only regional agency of the GEF that provides funds in support of activities that have global environment benefits.

ADB provides access to the Climate Investment Funds, which has two components: the Clean Technology Fund for demonstrating low-carbon technologies, and the Strategic Climate Fund to finance the testing of innovative adaptation and mitigation approaches.

Its unique position allows ADB to analyze the major problems regionally, nationally, and locally; identify solutions based on particular geographic, social, and environmental conditions; and package technical and financial assistance to achieve them.

¹² ADB. 2010. *Addressing Climate Change in Asia and the Pacific: Priorities for Action*. Manila.

Appendix: Design and Monitoring Framework

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions	Risks
<p>Impact Reduced vulnerability of Pacific developing member countries (DMCs) to risks and impacts of global climate change</p>	<p>National adaptation and mitigation strategies and action plans for all Pacific DMCs by 2012 Improved climate-adaptive sector plans linked to capital and recurrent budgets in the 14 Pacific DMCs by 2012</p>	<p>National governments' documents, strategies, and plans National budgets</p>	<p>Support from national authorities Support from nongovernment organizations Adequate budget appropriations and staff resources made available for adaptation and mitigation by national government Private sector participation</p>	<p>Differences in country perspectives on regional cooperation and investment priorities Absence of, or inability to detect, early signs of success of the proposed adaptation and mitigation program</p>
<p>Outcome Continued economic growth in the face of global climate change</p>	<p>All planned infrastructure projects include climate-proofed design, where benefits exceed costs 50% of Pacific DMC energy requirements are met by renewable energy sources</p>	<p>Development review and reports of Pacific DMC governments National and sector statistics</p>	<p>Cooperation and coordination among the participating countries</p>	
<p>Outputs</p>				
<p>I. Integration of Climate Change Adaptation and Mitigation Measures into National Development Plans and Programs of Pacific DMCs</p>				
<p>1. Capacity development for planning and implementation</p>	<p>1.1 Pacific DMCs assisted to mainstream climate change into national development plans 1.2 Trainings and workshops on climate change adaptation planning and project design organized 1.3 Capacity in disaster risk reduction and disaster risk management strengthened 1.4 Climate change coordination strengthened and/or established in the Pacific DMCs</p>	<p>Government agency documentation ADB documentation of programs, financing plans, partnership arrangements, and memorandums of understanding Planning approval records Relevant sector studies Records of discussions Country operations business plans and partnership strategies</p>	<p>Governments are committed to environmental protection Changes are made to investment and planning regulations</p>	<p>Business community lobbying against environmental protection Communities rejecting programs of adaptation practices to be adopted by governments Communities seeing mainstreaming as interference in village decisions Inability to get the required data and information</p>

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions	Risks
<p>2. Create awareness of climate change threats and risks to increase local participation and local stewardship</p>	<p>2.1 Support systems for collecting and analyzing climate-related data and making the results known to decision makers and the public</p> <p>2.2 Support information, education, and communication programs designed and delivered at various levels (regional, national, subnational, and local)</p> <p>2.3 Publication and dissemination of relevant materials</p>			
<p>II. Fast Tracking and Scaling Up Investment in Climate Change Adaptation and Mitigation</p>				
<p>3. Climate proofing of projects, programs, and plans</p>	<p>3.1 Methodology, guidelines and screening tools (e.g., project adaptation brief) provided</p> <p>3.2 Orientation, clinics, and briefing sessions for mission leaders on climate proofing organized</p> <p>3.3 Inputs to feasibility studies, project preparation, and design provided</p> <p>3.4 Climate proofing integrated into Coral Triangle Initiative Pacific investment design</p>			<p>Difficulty in finding and retaining the required skills in the relevant institutions of the selected Pacific DMCs</p>
<p>4. Promote renewable energy and energy efficiency</p>	<p>4.1 Support for upscaling renewable energy technologies</p> <p>4.2 Support for upscaling energy efficiency initiatives</p> <p>4.3 Capacity building for Clean Development Mechanism and establishment of designated national authorities</p>			
<p>III. Facilitate More Effective Response to Climate Change by ADB, its Development Partners and Pacific DMCs</p>				
<p>5. Work with potential development partners to establish the multidonor Pacific Climate Change Facility (PCCF)</p>	<p>5.1 PCCF developed and made operational as a "one-stop climate change service" to Pacific DMCs</p> <p>5.2 Assistance with information and guidance to Pacific DMCs to make use of PCCF</p>			
<p>6. Coordinate and harmonize response among development partners</p>	<p>6.1 Establishment of new network and/or strengthening the existing one; coordination and communication on the Climate Change Implementation Plan with national governments, development</p>			

Design Summary	Performance Targets/ Indicators	Data Sources/ Reporting Mechanisms	Assumptions	Risks
	<p>partners, nongovernment organizations, and private sector, including through existing roundtables of development partners</p> <p>6.2 Joint analysis, responses, programming, and financing</p>			
<p>7. Increase policy awareness of climate change impacts and responses within and outside ADB</p>	<p>7.1 Pacific Department (PARD) climate change program strengthened with inputs from international and regional meetings</p> <p>7.2 PARD program disseminated and partnerships extended to development partners</p> <p>7.3 Brief management for meetings or visits</p> <p>7.4 Information system for multisectoral climate change vulnerability and adaptation assessment developed</p> <p>7.5 Contributions to international and regional meetings (e.g., Climate Investment Funds, Coral Triangle Initiative, Global Environment Facility, United Nations Framework Convention on Climate Change)</p> <p>7.6 Regional workshops, meetings, and seminars organized</p> <p>7.7 Study of economics of climate change conducted</p> <p>7.8 Briefing materials for internal and external use prepared</p> <p>7.9 ADB management supported by providing technical and policy information and data</p>			
<p>8. Integrate climate change into PARD operations</p>	<p>8.1 Inputs to regional and country operations business plans and country partnership strategies provided</p> <p>8.2 Reviews and sector analysis undertaken</p> <p>8.3 Sector specific climate risk assessment guidelines prepared</p>			

ADB = Asian Development Bank, DMC = developing member country, PARD = Pacific Department, PCCF = Pacific Climate Change Facility.

Responding to Climate Change in the Pacific: Moving from Strategy to Action

ADB's Pacific Climate Change Program will address climate change-related technical and financing needs and support the planning and implementation of the climate responsive national development plans of Pacific developing member countries. Using innovative financing mechanisms, the program will build on and enhance efforts to-date by a variety of development partners, and will work with regional and national agencies and local communities to create and promote knowledge, skills, and practices in climate change-related fields.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries substantially reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.8 billion people who live on less than \$2 a day, with 903 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

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